ASSIGNMENT 9

Textbook Assignment: "Dead Reckoning, Piloting, and Electronic Navigation (continued)," and "Celestial Observations and Sight Reduction Methods," chapters 8 and 9, pages 8-24 through 9-4.

9-1. What is the principal function of a sextant in navigation?

1. To measure ranges to other ships
2. To measure the angle between a heavenly body and the visible horizon
3. To determine the courses of the ships
4. To determine the true bearings of navigational aids

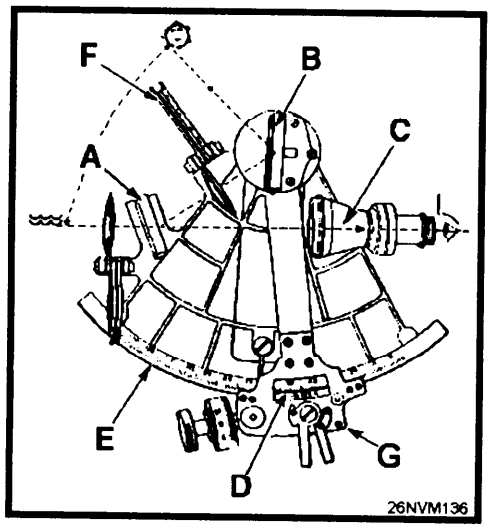

Figure 9-A

IN ANSWERING QUESTIONS 9-2 THROUGH 9-7 REFER TO FIGURE 9-A, THE MARINE SEXTANT.

9-2. The index arm pivots about the exact center of the curvature of the part of the sextant marked with what letter?

1. B
2. E
3. F
4. G

9-3. What part pivots at one end to allow the index mirror to reflect on the horizon glass?

1. A
2. D
3. E
4. G

9-4. What part of the sextant is parallel to the horizon glass when the index mark is at zero and there is no index correction?

1. B
2. C
3. D
4. F

9-5. What part of the sextant is the horizon glass?

1. A
2. B
3. C
4. E

9-6. What part directs the observer's line of sight?

1. B
2. C
3. D
4. E

9-7. What part protects the observer's eye when viewing the Sun?

1. D
2. E
3. F
4. G

9-8. The micrometer drum of the sextant is graduated in which of the following increments?

1. Half seconds from 0 to 180
2. Half seconds from 0 to 20
3. Seconds from 0 to 60
4. Minutes from 0 to 60

9-9. How many degrees is the sextant index arm moved by one complete rotation of the micrometer drum?

1. 10
2. 20
3. 50
4. 100

9-10. When you take a celestial observation with the sextant, from what part should the angular reading be taken?

1. Arc scale
2. Micrometer drum
3. Vernier scale
4. Each of the above

9-11. When the reflected object is sighted in the horizon glass, how should the object be positioned in relation to the visible horizon?

1. Slightly above horizon
2. Slightly below horizon
3. Placed on or even with the horizon

9-12. In what increments is the vernier scale graduated?

1. Tenths of minutes
2. Seconds
3. Minutes
4. Degrees

9-13. When a sextant is used, how often should the index error be checked?

1. During PMS
2. Before the sextant is used
3. Before each sighting
4. After the sextant is used

9-14. A sextant's index error can not be adjusted.

1. True
2. False

9-15. If the sextant has no index error, the reflected horizon and the visible horizon will coincide.

1. True
2. False

9-16. You have sighted on the horizon to determine the index correction of a sextant. The index mark falls on the arc just to the left of the 0° line. If the drum and vernier read 9.4', what is the index correction, and how is it applied?

1. + 50.6' - added
2. + 9.4' - subtracted
3. - 50.6' - subtracted
4. - 9.4' - added

9-17. You have sighted on the horizon to determine the index correction of a sextant. The index mark falls on the arc just to the right of the 0° line. If the drum and vernier read 3.7', what is the index correction, and how is it applied?

1. - 3.7' - added
2. - 56.3' - added
3. + 3.7' - added
4. + 56.3' - subtracted

9-18. Which of the following methods of fixing a ship's position is the most accurate?

1. Taking a range and bearing to a single object
2. Establishing intersecting lines of position with bearings of two or more objects
3. Taking horizontal sextant angles between three fixed objects
4. Taking successive bearings of a single fixed object

9-19. To shoot sextant angles, you must have a total of how many objects?

1. One
2. Two
3. Three
4. Four

9-20. When you shoot sextant angles, how should the two images look?

1. The middle object should be to the left
2. The middle object should be to the right
3. One image above the other
4. The two images should coincide

9-21. What instrument is used to plot a position obtained by horizontal sextant angles?

1. Dead-reckoning tracer
2. Dividers
3. Parallel rulers
4. Three-arm protractor

9-22. To what accuracy can a three-arm protractor be plotted?

1. Nearest second of arc
2. Nearest tenth of degree
3. Nearest minute of arc
4. Nearest degree

9-23. Which of the following terms defines the circumference of a circle, when sextant angles are used?

1. Swinger only
2. Pivot
3. Revolver only
4. Swinger or revolver

9-24. The pivot point of a three-arm protractor is the ship's position.

1. True
2. False

9-25. How is a series of single LOP's from visual bearings referred?

1. Estimated position only
2. Running fix only
3. Dead reckoning position
4. Running fix or estimated position

9-26. How is a running fix labeled?

1. As a visual fix with the abbreviation R
2. As a visual fix with the abbreviation RF
3. As a running fix with the abbreviation R
4. As an estimated fix with the abbreviation RF

9-27. Which of the following is NOT a piece of electronic navigation equipment?

1. Loran-A
2. Loran-C
3. RDF
4. SINS

9-28. Which of the following is/are disadvantage(s) of electronic navigation?

1. Possible breakdown
2. Malfunctioning
3. Damage
4. All of the above

9-29. Which of the following devices is the most accurate for obtaining soundings in shallow depths?

1. Sounding machine
2. Hand lead
3. Fathometer
4. Pit log

9-30. What type of echo sounder is most commonly found aboard U.S. Naval vessels?

1. AN/UQN-1
2. AN/UQN-4
3. SRN-12
4. SRN-19

9-31. What is the largest depth the echo sounder will record?

1. 600 feet
2. 600 fathoms
3. 6,000 feet
4. 6,000 fathoms

9-32. Depths less than 400 feet can be most accurately established by the AN/UQN-4 when the recorder is set to what range?

1. 600 feet
2. 600 fathoms only
3. 6,000 fathoms only
4. 600 or 6,000 fathoms

9-33. At what time each day should the depths be recorded?

1. 0800 LMT
2. 0800 GMT
3. 1200 LMT
4. 1200 GMT

9-34. Which of the following is NOT required to be recorded on each new roll of AN/UQN-4 recording paper?

1. Ship's name
2. Time zone
3. AN/UQN operator's name
4. Date

9-35. To what does the term Loran refer?

1. Low range navigation
2. Low range radio navigation
3. Long range navigation
4. Long range radio navigation

9-36. Loran-C is generally accurate to within what maximum distance?

1. .10 nmi
2. .25 nmi
3. .50 nmi
4. 1.00 nmi

9-37. Which of the following best describes the SATNAV system of navigation?

1. All-weather, worldwide navigational system
2. All-weather, navigational system used by ships, aircraft, and submarines
3. Highly accurate, worldwide navigation system
4. Highly accurate, all-weather, worldwide navigational system, used by ships, aircraft, and submarines

9-38. Which equipment identification number refers to SATNAV?

1. AN-SRN 12
2. AN-SRN 19
3. AN-BRN-3
4. AN-WRN-6

9-39. A total of how many major components make up the SATNAV?

1. Five
2. Six
3. Three
4. Four

9-40. A total of how many operational satellites are in use for the Navstar GPS navigation system?

1. 18
2. 20
3. 21
4. 24

9-41. How many total satellites make up the Navstar GPS navigation system?

1. 18
2. 21
3. 24
4. 27

9-42. When using the Navstar GPS a minimum of how many satellites are in-view of any user?

1. Five
2. Two
3. Three
4. Four

9-43. What is the accuracy of the AN/WRN-6(V) in the encrypted mode?

1. 100 meters
2. 100 yards
3. 16 meters
4. 16 yards

9-44. A typical surface radar is made up of how many components?

1. Nine
2. Seven
3. Three
4. Five

9-45. Which of the following is a basic principle of radar operation?

1. The antenna receives pulses transmitted by shore stations
2. Radio waves are reflected from solid objects
3. Transmitting high power will burn through interference
4. The antenna will pick up any change in the magnetic field of an object

9-46. When obtained by radar, which of the following navigational fixes is most accurate?

1. Range and bearing to a single object
2. Two ranges on two different objects
3. Two bearings to a single object
4. Two ranges to a single small object

9-47. What component of a radar system provides a bird's-eye view of the area covered?

1. Modulator
2. Receiver
3. Transmitter
4. PPI

9-48. On a radar scope, what indicates the sweep?

1. A bright line
2. A bright spot
3. A green line sweeping through 360°
4. A variable bright ring

9-49. In what increments is range measured on a radar scope?

1. Feet
2. Yards only
3. Miles only
4. Yards or miles

9-50. On a radar scope, what indicates the bearing cursor?

1. A bright line
2. A bright spot
3. A green line sweeping through 360°
4. A variable bright ring

9-51. If your ship has a gyro failure, what type of bearings would you read from the PPI?

1. Apparent
2. Magnetic
3. Relative
4. True

9-52. Range is determined on a radar scope by placing the strobe on what position of the target?

1. Middle
2. Leading edge
3. Trailing edge
4. Right side

9-53. Which of the following navigational fixes is the least accurate?

1. Visual bearing and radar range
2. Two radar bearings on two different objects
3. Tangent radar bearings
4. Two radar ranges on two different objects

9-54. A navigational fix obtained by radar tangent bearings and compensated by half of the beam width may be considered accurate.

1. True
2. False

9-55. Which of the following objects should NOT be used in obtaining a navigational fix?

1. Buoys
2. Small isolated rocks
3. Islands
4. Pilings

9-56. What type of system(s) is SINS?

1. Satellite
2. Inertial
3. Radio wave

9-57. Which of the following craft would use SINS to navigate?

1. Rocket
2. Ship
3. Airplane
4. Each of the above

9-58. Which of the following is a characteristic of SINS?

1. Extremely accurate, global system
2. Global,all-weather system
3. Global, all-weather satellite system
4. Accurate, all-weather, dead reckoning system

9-59. What is the maximum range a radio beacon is reliable?

1. 50 mi
2. 100 mi
3. 125 mi
4. 175 mi

9-60. When a radio beacon is greater than 25 miles, a correction is usually applied to the bearing before plotting.

1. True
2. False

9-61. Which of the following is NOT a celestial method of determining gyro compass error?

1. Sun line
2. Azimuth of Sun
3. Azimuth of Polaris
4. Amplitude of Sun

9-62. What type of time is used in celestial observations?

1. GMT
2. LMT
3. ZT
4. LT

9-63. What information must you first know to determine gyro compass error?

1. Time of observation, Julian date, DR position, and bearing of Sun
2. Time of observation, date, DR position, and azimuth
3. Time of observation, Julian date, DR position, and declination
4. Time of observation, date, DR position, and declination

9-64. When an azimuth of the Sun is shot, the bearings are always in true degrees.

1. True
2. False

9-65. When should an azimuth be taken?

1. Early morning
2. Mid-morning only
3. Mid-afternoon only
4. Mid-morning or mid-afternoon

9-66. From what source should the watch time be obtained prior to a celestial observation?

1. AN/WRN-6 only
2. Ship's chronometer only
3. Both 1 and 2 above
4. Ship's clocks

9-67. Which navigation instrument is used to shoot an azimuth?

1. Bearing circle only
2. Azimuth circle only
3. Alidade
4. Bearing or azimuth circle

9-68. To what accuracy are gyro bearings observed when shooting an azimuth of the Sun?

1. 0.10°
2. 0.25°
3. 0.50°
4. 1.00°

9-69. A total of how many azimuths should be shot to ensure an accurate gyro compass error?

1. 1
2. 2
3. 3
4. 4

9-70. Which of the following publications should be used to determine gyro error?

1. Nautical Almanac only
2. Pub 229 only
3. Pub 249 and Nautical Almanac
4. Pub 229 and Nautical Almanac